TRANSPARENT PANEL-FORM LOUDSPEAKER

ABSTRACT OF THE DISCLOSURE

A transparent panel-form loudspeaker consists of a transparent sound radiation panel that can radiate sound with desired pressure level over a specific frequency range when subjected to the flexural vibration induced by a preselected number of transducers located at specific positions on the peripheral edge of the transparent sound radiation panel and a rigid frame carrying a flexible suspension device which supports the periphery of the transparent sound radiation panel. The transparent sound radiation panel is made of a kind of transparent materials with the ratio of elastic modulus to density in the range from 3 to 180 GPa/(g/cm^3) and the ratio of length to thickness of the transparent sound radiation panel in the range from 80 to 600. The flexible suspension device supporting the periphery of the transparent sound radiation panel is used to modify the vibrational characteristics of the transparent sound radiation panel for an effective generation of the vibrational normal modes which are beneficial for sound radiation. The transducers are situated at predetermined locations on the peripheral edge of the transparent sound radiation panel so that relatively high radiation efficiency and more uniform spread of sound pressure level spectrum can be produced by the transparent sound radiation panel over a desired operative acoustic frequency range.